

**MAGNETIC TUNNEL JUNCTION DEVICE WITH ETCH STOP LAYER AND
DUAL- DAMASCENE CONDUCTOR**

ABSTRACT

A method of making a magnetic tunnel junction device is disclosed. The method includes forming an etch stop layer on a magnetic tunnel junction stack. In subsequent etching steps, the etch stop layer protects one or more layers of magnetic material in the magnetic tunnel junction stack from chemical erosion caused by an etch material, such as an etch material that includes the chemical fluorine (F), for example. The etch stop layer is made from an electrically conductive material. The method also reduces the number of process steps by forming a self-aligned via in a dielectric layer. A deposition of a second electrically conductive material completely fills the self-aligned via and covers the dielectric layer to form a dual-damascene conductor in one processing step. The dual-damascene conductor includes a via positioned in the self-aligned via and a top conductor in contact with the dielectric layer.